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ABSTRACT

From a cognitive perspective, racial bias is evident when raters weigh job-relevant information differentially as a function of ratee race. The results of studies that have examined this issue have been conflicting. Meta-analytic procedures were used to provide more definitive conclusions as to whether supervisor ratings are more strongly related to objective indices of performance for black than for white employees. The results from 18 studies indicated that the relationship between objective and subjective measures varied as a function of ratee race and the type of objective criteria used. The ratings of blacks were more related to objective indices than were the ratings of whites. Differences in correlations by race were found for performance but not for objective job knowledge measures. More attention needs to be focused on uncovering systematic job relevant and irrelevant variance that is related to both subjective and objective indices of performance. (Author/NRB)

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The Relationship Among Criteria as a Function of Subgroup Membership: An Integrative Review

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Abstract

From a cognitive perspective, racial bias is evident when raters weigh job relevant information differentially as a function of ratee race. The results of studies that have examined this issue have been conflicting. The present research used meta-analytic procedures to provide more definitive conclusions as to whether supervisor ratings are more strongly related to objective indices of performance for black than for white employees. The results from eighteen studies indicated that the relationship between objective and subjective measures varied as a function of ratee race and the type of objective criteria used. Ratings of blacks were more related to objective indices ($\bar{r}$=.27) than for whites ($\bar{r}$=.13). Moreover, differences in correlations by race were found for performance but not for objective job knowledge measures. Implications for the existence of positivity bias in ratings were discussed and research directions suggested.

The Relationship Among Criteria as a Function of Subgroup Membership: An Integrative Review

For the last twenty years, much research attention has focused on the potential for racial bias in personnel decisions. Although researchers have acknowledged that important personnel issues such as test fairness cannot be addressed without an unbiased criterion (Cleary, 1968; Guion, 1966), personnel research continues to concentrate on predictor rather than criterion-related issues of bias (Burke, 1984).

Investigations that have examined the potential for criterion bias have largely been simplistic and atheoretical (Feldman, 1981). The literature is replete with examples of studies that compare subgroup mean differences and provide post hoc explanations for the presence or absence of bias. However, differences in subgroup means and variances are not necessarily evidence of bias, nor does the lack of differences indicate a lack of bias. Consequently, this approach to bias has resulted in a diverse literature and few substantive conclusions.

A new direction for increasing our understanding of the nature and covariates of bias is a cognitive, information processing approach. Landy and Farr (1980) have provided a basis for this approach by defining bias as the application of different mental processes regarding ratees as a function of their subgroup membership. This definition implies that raters may selectively attend to different behaviors of the ratee, differentially use or discriminate among performance dimensions, and/or weight various

job relevant and job irrelevant information differentially as a function of ratee race.

Although attempts to directly study these underlying processes are rare, a few studies have examined the extent to which job relevant information is differentially related to ratings as a function of ratee race. Operationally, these studies have investigated the extent to which objective performance indices are related to subjective ratings of performance. Bass and Turner (1973), for example, found that the number of errors made by part-time tellers was more related to ratings of "quality of work" for black than for white ratees. Cascio and Valenzi (1978) used eight objective measures of police performance as predictors of a summated rating. The results indicated that identical predictor sets validly forecasted supervisory ratings for black and white officers and that objective data were related to ratings similarly for black and white officers. Flaugher and Norris (1969) found that ratings of job knowledge given by white supervisors were more highly correlated with actual job knowledge test scores for black than for white subordinates. Campbell, Crooks, Mahoney & Rock (1973) also found a stronger relationship between job knowledge test scores and ratings of job knowledge for black than white medical technicians but found no difference in this relationship for cartographic technicians.

The above studies have demonstrated that a significant amount of the rating variance is related to one or more "objective" measures of performance. Nevertheless, the conclusions from these

studies are conflicting as to whether ratings are more strongly related to objective indices of performance for black than for white ratees.

The present study is an attempt to provide more definitive conclusions as to the extent to which objective measures of performance are differentially related to ratings as a function of ratee race. Meta-analysis was used to test the hypothesis posited by Cascio and Valenzi (1978) that supervisory ratings are more strongly related to objective indices of performance for black than for white employees. In addition, the present study explored the possibility that the relationship between objective performance and subjective ratings is moderated by the type of objective criteria (actual performance or job knowledge indices) employed (Ford, Kraiger, & Schechtman, 1986).

Method

An attempt was made to locate and cumulate the results of all published and unpublished studies reporting a correlation between at least one objective index and an overall rating of performance effectiveness for the same sample of black and white employees. A total of 18 samples were located for the analysis and are presented in the appendix.

Analysis

The weighted mean correlation ($\bar{r}$) of the relationship between the objective data and subjective ratings was cumulated by ratee race. The variance (σ_r^2) across studies, sampling error (σ_e^2), and the population variance (σ^2) were computed using procedures developed by Hunter, Schmidt and Jackson (1982). The estimated standard error (σ_e) was used to establish 95% confidence intervals around the appropriate r to test the hypothesis that $\bar{r} = 0$ in the population.

The 18 samples in the analysis included 15 different objective measures of performance. Using procedures similar to Ford et al. (1985), these criteria were reliably categorized into the following two categories: performance indices (N=9) (e.g., number of arrests, accidents, attendance) and job knowledge (N=9) (e.g., objectively scored written examinations) criteria. Ratings of overall effectiveness were used in the analysis when specific ratings (e.g., job knowledge, quality of work) were not available. The raters in the studies were predominately white.

Differences in correlation related to criterion type were examined by classifying the studies into the appropriate subsample and recomputing subsample r's, σ^2's and 95% confidence intervals. A moderator is evident when the average correlation varies from subset to subset and the corrected variance is lower in the subsets than for the data as a whole (Hunter et al., 1982).

Results

The results of the meta-analysis are presented in Table 1. The table contains cumulated sample sizes for the black and white samples, mean correlations, variance estimates and 95% confidence intervals for the 18 studies in the overall analysis and for the data as divided by criterion type.

Insert Table 1 about here

The best estimate of the population correlation is the weighted mean correlation between the objective index and the subjective rating of performance. For the overall analysis, the weighted mean correlation for the 1337 black ratees in the sample was .27. For the 3644 white ratees, the mean correlation was .13. The 95% confidence interval for the black sample rejects the null hypothesis that r=0 in the population ($.06 < \rho < .48$) while the interval includes zero for the white sample ($-.005 < \rho < .26$).

The moderator analyses presented in Table 1 indicate that for the performance measures, the mean correlation for black ratees ($\bar{r}=.23$) varied from the mean correlation for white ratees ($\bar{r}=.06$). The corrected variance was also lower in the subsets than for the data overall. For the job knowledge criteria, the mean correlations for the black ($\bar{r}=.31$) and white ($\bar{r}=.30$) ratees were quite similar.

Discussion

This meta-analysis integrates and extends previous research (e.g., Bass and Turner, 1973; Cascio and Valenzi, 1978) on the relationship among criterion measures. The results support the hypothesis that ratings are more related to objective data for black than for white ratees. The relationship between objective and subjective measures of performance was also a function of the type of objective criteria used. Ratings of blacks were more strongly related to objective measures of job performance, while no evidence was provided to support the conclusions of Flaugher and Norris (1969) regarding the relationship among job knowledge indices, supervisory ratings and ratee race. It is interesting to note that the correlation between job knowledge scores and ratings of effectiveness is higher than for objective performance indices and ratings. This occurs despite the fact that for some studies multiple objective performance indices were used to predict subjective ratings while only one index of job knowledge was correlated with a rating of performance. These results support Hunter's (1983) claim that job knowledge is a critical variable considered by raters when making performance evaluations.

One possible explanation for the present results is that given the pressures to be "unbiased" in their evaluations, white supervisors may rely on more objective, documented evidence when rating black ratees (Cascio & Valenzi, 1978). A second, more theoretical explanation is that white supervisors may be more psychologically distant from black than from white ratees, thereby

reducing the possibility for using non-objective compensatory factors (i.e., "at least he/she tries hard") when evaluating black ratees (Bass and Turner, 1973; Kraiger, 1981). The counterintuitive premise that bias may result from a tendency by raters to inflate the ratings of the majority group rather than deflate the ratings of the minority group has been labeled positivity bias (Pettigrew, 1979). With positivity bias, the minority group that received the more "objective" rating is in fact being unfairly evaluated in comparison to the majority group.

The existence of a positivity bias has important implications for research as it suggests the need to further examine the information used and the causal explanations made by raters when evaluating ratees. For example, raters could be making positive internal attributions ("he/she tries hard") which may compensate for poorer actual performance for the one subgroup that is more similar to the rater. One technique for exploring this possibility is having raters provide verbal protocols (Payne, 1976) and having the results coded for type of reasons given for the evaluation of performance (ability, effort, task difficulty, luck). The responses could also be coded for the frequency of behavioral examples or actual job performance data (e.g., attendance) used while evaluating individuals of different races.

Regardless of the explanation, the results indicate that the common notion that ratings are "biased" <u>against</u> blacks may not be as appropriate as the notion that ratings are biased <u>for</u> whites. In other words, differences in ratings as a function of ratee race

may partially result from the inflation of the majority group's ratings beyond what their performance dictates.

The results of the present meta-analysis are not meant to imply that raters use objective information in the same manner as indicated by the weighted mean correlations (Cascio and Valenzi, 1978). The important notion is that more attention needs to be focused on uncovering systematic job relevant and irrelevant variance that is related to both subjective and objective indices of performance. Only with a greater understanding of these criterion issues can we hope to improve our understanding of predictor-criterion relationships and their linkage to racial bias.

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Appendix

Studies included in the Meta-Analysis of Race Effects

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Table 1

A Meta-Analysis of the Relationship of Objective and Subjective Performance Measures by Ratee Race and Criterion Type

Analysis	No. Studies	Subgroup	N	$\bar{r}$	σ_r^2	σ_e^2
Overall[a]	18	Black	1337	.270	.0410	.0116
		White	3644	.130	.0274	.0048
Performance Indices	9	Black	706	.232	.0158	.0014
		White	2615	.064	.0179	.0034
Job Knowledge Indices	9	Black	631	.312	.0658	.0116
		White	1029	.296	.012797	.0072

(table continued)

Table 1 (cont.)

A Meta-Analysis of the Relationship of Objective and Subjective Performance Measures by Ratee Race and Criterion Type

Analysis	Subgroup	σ_e	σ_ρ^2	σ_e^2/σ_r^2	Confidence Intervals
Overall	Black	.108	.0294	.282	$.058 < \rho < .482$
	White	.069	.0226	.174	$-.005 < \rho < .265$
Performance Indices	Black	.107	.0044	.721	$.022 < \rho < .442$
	White	.058	.0145	.190	$-.050 < \rho < .178$
Job Knowledge Indices	Black	.108	.0542	.176	$.100 < \rho < .524$
	White	.085	.0055	.569	$.130 < \rho < .463$

[a]The shrinkage formula provided by Cohen & Cohen (1983) was applied to multiple R's from individual studies with multiple objective indices predicting a singular subjective rating of overall effectiveness.